



Learning and Information Services

TECHNOLOGY OVERVIEW

LEARNING & TEACHING : COURSES : SERVICES : RESOURCES : TECHNOLOGY : PROJECTS : MAGAZINE :
ABOUT

What is Authorware?

Authorware is an icon-based authoring package and is commonly used to produce interactive multimedia, training applications, hypermedia reference systems and even on-line magazines.

The simple approach adopted by Authorware allows developers with low programming experience to produce complex multimedia applications. Typical packages or *pieces* as they are often known incorporate digital movies, sound, animations, text and graphics.

Authorware is produced by Macromedia Inc. and is available for both IBM PC (Windows) and the Apple Macintosh. Check out their website!

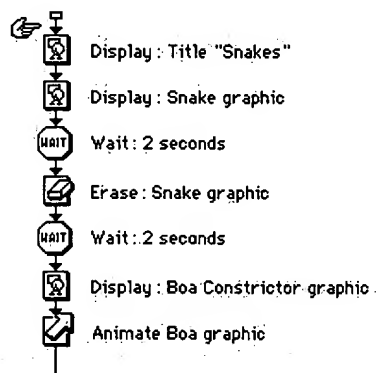
Authorware requires little in terms of time investment to produce a simple piece, whereas the more complex programming languages and authoring tools require considerable effort. The developer is also rewarded by continual exploration of Authorware's programming capabilities and over a period of time can extend the functionality of their package. Basically Authorware has much to offer both the non programmer and the experienced programmer alike.

Icon-Based Authoring

The piece is constructed by the direct manipulation of a number of icons. The icons themselves contain the content of the piece which includes graphics, text, animation, sound, movies or animations. They also contain sets of instructions which can influence the interactive and decision-making elements of the piece. So each icon performs a specific function.

A single package can hold up to 16,000 icons and these are arranged in a logical order. Authorware makes use of a flowline metaphor whereby each icon is placed on a flowline and its function is activated according to the order in which it is encountered. For example Figure 1 shows a typical flowline sequence.

Figure 1:
Shows a
typical
flowline
consisting of
a number of
commonly
used icons
within
Authorware.
You can see
how the
function
performed by
each icon
relates to the
other. Can
you figure
out what the
program is
doing?



For the more adventurous programmer Authorware has calculation icons from which various functions can be called and executed. It is also used to assign variables to other icons such as question answers and can update values during the programs execution. Figure 2 for example shows a calculation icon attached to a button which will cause the program to quit when the user clicks it.

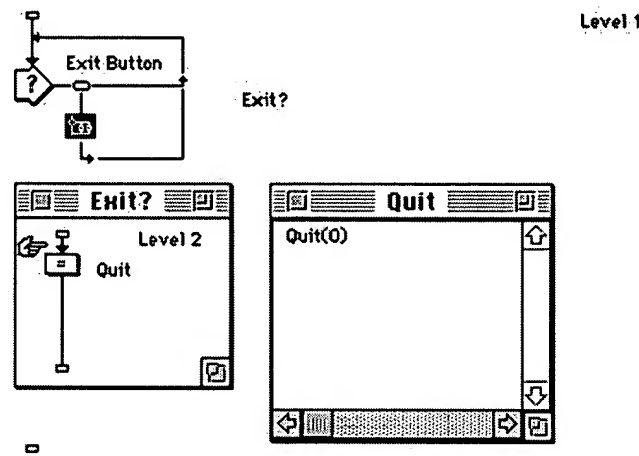


Figure 2: Shows a "Calculation" icon which uses the function "Quit" to exit the program.

So we can see that the positioning of the icons on the flowline determines the structure and logic of the program.

Variables and Functions

Authorware makes use of a number of optional variables and functions. Both the variables and functions can be combined to form an expression. These can be used to extend the functionality of the piece. Functions specifically can be used to control the piece at a much more deeper level than that provided by the icons alone. For instance you can do any one of the following:

- collect data
- manipulate data
- obtain information about interactions
- make decisions based on specific conditions
- send detailed instructions to the piece to perform various tasks

Authorware contains 170 variables which are designed to hold changeable values. In addition to that you can also create your own! Examples include:

- Date: contains the date at which the user accessed the piece
- EntryText: contains the text of the users last response to a question
- ResponseTime: contains the number of seconds a user took to respond to a question
- TotalWrong: contains the total number of wrong responses

Functions perform specific tasks and Authorware has over 200! Examples of functions include:

- FindText: searches for a specific word in the piece
- GoToNetPage: opens a specified URL
- MediaPlayer: starts playing a digital movie or video clip
- PrintScreen: prints the information displayed on the screen

Automated Response Tracking

One of Authorwares main strengths is that of automated tracking of user response. The response could in the form of a numerical or textual input to a question, the useage of certain buttons (Help, Further Information, Animation etc.), the time spent over a particular section, or the user's test score.

This is achieved by Authorware using a series of variables to keep a record of the user's progress. The data can then be used in a variety of ways: to present a final score, to branch to another area in the program or to inform the student that they are weak in certain areas.

Interactive Tutorials

Authorware excels in one area and that is the production of interactive tutorials. Most authoring tools create pieces which include simple interactions, e.g. "Wrong!" - a simple textual reply in response to an incorrect user input. In such cases there is no attempt to redress the user's misconceptions of the topic. However Authorware allows the developer to encode into the system a series of responses for a particular question. For example Figure 3 shows a question which has a number of encoded responses based on the most likely incorrect solutions for the question. Thus when the user makes an incorrect entry the program provides informative feedback and when mistakes are continually made a dialogue is entered into. It is therefore possible for Authorware to "guide" student towards the correct solution for a complex question.

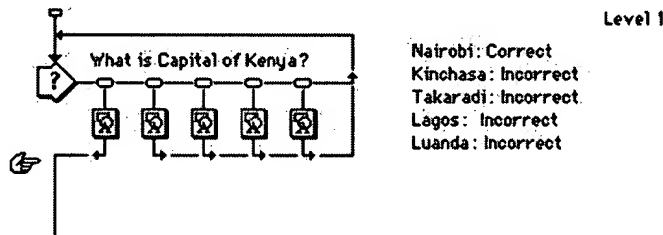


Figure 3 :Shows a typical question for which there are a number of encoded responses. Each response is matched to a predicted incorrect solution to the question. When the user enters a wrong answer the relevant response is triggered and feedback is provided.

Question Types

Authorware supports multiple choice questions, drag and drop exercises, matching lists, true or false questions, and long or short text answers. The range of question type gives the developer plenty of scope for imaginative questioning.

Branching According to User Response

Authorware allows the piece to branch according to user response. In other words a student whose performance falls below a given threshold can be required to perform remedial work in the form of retaking failed test questions, while the converse is true - high performance students can be presented with more complex questions.

Authorware and Director Movies

Authorware can be linked to external files including Director movies. It is now possible for the program to call a Director file from within it, play it and return to back to the piece. Authorware can also link to files from other external sources such as the Web or CD-ROM. Thus for a finished product which has been marketed by CD-ROM it is easy to update content by use of external links to a central server.

Authorware and the Web

Authorware pieces can now be made to be accessible over the Web. Authorware makes use Shockwave which is a plug-in for Netscape Navigator and other compatible browsers, to create pieces for the internet. It is now possible for an Authorware piece to link to external content on a web server. This makes the piece ideal for distance learning where course content can be updated regularly on the server. Click here to see an example of a shocked Authorware question, (you will

need Authorware Web Player). Also check out the Triads site for examples of Authorware on the net

Support

Unlike many authoring tools Authorware is comprehensively supported by a variety of services. These include tutorials, templates, on-line help, example pieces and websites.

QuickStart Templates

It has increasingly become the norm for many authoring tools to include a tutorial which takes the developer through the various aspects of design and Authorware is no exception. However unlike its counterparts Authorware also comes with a set of predefined templates. Each serves a particular purpose and includes templates for content, administration and testing. When used together they create a program which logs in users, delivers content and tests the user's knowledge of the content. This gives you a head start in the production of a prototype early on in the project time scale.<

On-Line Help

The on-line help system within Authorware is very comprehensive and includes details on the following:

- Authorware commands
- functions
- scripting
- step by step procedures
- tools
- icons
- and short links

There is also a list of useful weblinks including the Authorware Developers Centre

Authorware Developers Centre

The Authorware Developers Centre is a website hosted by Macromedia where fellow developers can be contacted and can be found at <http://www-euro.macromedia.com/support/authorware/>. The site includes information on the following:

- expert advice and articles on problems
- new examples of Authorware pieces
- products
- other related websites
- usergroups - you are not alone!

"Show Me" Files

Authorware includes up to 40 "Show Me" files which are designed to help the developer understand common functions and so extend their pieces. Other files are also regularly posted to the Authorware Developers Centre.

Other Examples

The Macromedia site is host to many examples of educational software created by Authorware. Click [here](#) to take a look, (you will need Authorware Web Player)

Reference

Macromedia Authorware 4: Using Authorware, 1997, Macromedia Inc.

Further Reading

- The Official Guide to Authorware 4, Nick Roberts
- Authorware 4 Authorised, Macromedia Inc.

Page last updated April 2000 by Andrew Oliver
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